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THE SILVER QUESTION AND BIMETALISM.

BY J. JAMES COUSINS, ALLERTON PARK, CHAPEL ALLERTON,
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I do not think any apology is needed in introducing the silver question as a scientific one, as no subject can have a deeper interest for the American scientist at the present time, than a consideration which can furnish one particle of elucidation to this most interesting and complicated question.

In order to arrive at anything like a fair solution (and that is the only one the world which is both our debtor and creditor will listen to) we must divest it of all local and national considerations, because the fact of nearly all the silver in use being the product of America, a certain amount of prejudice against American opinions and actions is engendered thereby.

We find it stated (Wealth of Nations Vol. 1, 743. McCulloch's ed.) "Every prudent man, in every period of society, after the establishment of the division of labor, must naturally have endeavoured to manage his affairs in such a manner as to have at all times by him, besides the peculiar product of his own industry, a certain quantity of some one commodity or another, such as he imagined few people would be likely to refuse in exchange for the produce of their industry."

The question is, do we find in silver such a commodity? Do our creditors all over the world exhibit a willingness to accept payment for our debts in silver? The answer is obviously "no."

In the event of our succeeding in enforcing such payment as a legal tender, it is certain that those who did so would buy upon worse terms than those who paid in gold, a metal which all the commercial world is craving for.

Now is this craving merely sentimental, or is there good ground for its existence?

One thing is certain that large and important countries one after another are abandoning the double standard, and silver is the one sacrificed, the reason for which is not far to seek.

In order to successively maintain a double standard, we must be able to fix an unfailing ratio of value between the two metals, let us see if that is possible between gold and silver.

We find that in the time of Julius Caesar the ratio of value between the two metals was 9 to 1; in the beginning of the present century $15\frac{1}{2}$ to 1, and now $27\frac{1}{2}$ to 1, which seems to point to an impossibility of establishing a ratio of value, it is obvious that to measure length a standard must have fixed length, to measure value it must have fixed value, attempts have been made by powerful syndicates to give an enhanced value to copper, iron, tin, cotton, corn, etc., all of which have ultimately broken down.

Suppose for a moment the government of the great commercial countries of the world were to establish a bimetallic standard and accept silver as one of them. In order to be of any value to the silver interest, silver must be a legal tender to any amount.

From its depreciating tendency it would soon become the one medium of exchange, and gold would assuredly be hoarded, which would prove most inconvenient, for in the event of your presenting say a cheque of \$5000 for payment the banker, whoever he may be, would insist upon the customer taking silver because it paid him (the banker) best to do so, and it is difficult to realise the position of the customer under such circumstances, whilst the trouble and difficulty of international exchange would be greatly enhanced.

I propose in a later article to introduce the subject of an international clearing house, the relief of which to the

metallic exchange can only be appreciated by those who have a thorough knowledge of the advantages of the London clearing house, where the bulk of the trade of the United Kingdom is settled for, upwards of twenty millions sterling per day, without the interchange of a single coin.

These two subjects are so interwoven that one cannot be fairly or properly considered without the other, but this article has already run out its proper length for your columns so that I dare not do more than hint at the subject of an "International Clearing House."

I may just say in conclusion that in my opinion the "letter" of Mr. Farley who was elected President of the National Board of Trade at Washington last January, and which may be read in the official report of the proceedings of that meeting, whilst it contains many valuable suggestions upon the silver question, would be found as a whole to be thoroughly unworkable.

FAITH IN THE INTEGRITY OF THE INTERSTELLAR MEDIUM.

BY DE VOLSON WOOD, HOBOKEN, N. J.

THAT space is not void, is conceded. That it is filled with a medium capable of transmitting light and heat is not questioned. This medium is believed to be uniform in density and elasticity, but the exact nature of its constitution is unknown. Some believe it to be molecular like gas, while others question if its structure has been correctly defined. It makes no direct impression upon the senses, and is known only through effects produced; and yet, whatever be its nature, it is known to transmit a wave of light at the rate of 86,300 miles per second, there being, as a mean value, within the spectrum, about 50,000 waves in an inch, or more than 60,000,000,000,000,000 in the distance passed over in one second. When it is considered that waves are transmitted through this medium in all conceivable directions with the same velocity, some faint conception may be had of its intense activity. The complicity of the waves is transcendent, for each shade of light has its own wave length, there being about 36,000 waves to the inch in red light, and more than 64,000 in violet, and outside the visible spectrum there are less in number in one direction and more in the other. Every self-luminous body in the universe is imparting to this medium waves of these varying lengths all travelling with a sensibly constant velocity. When it is considered that the countless number of stars and suns, scattered promiscuously throughout limitless space, are producing such waves, radiating from each in all possible directions, it would seem that, if they did not actually destroy each other they would so interfere as to produce "confusion worse confounded" and the impressions upon the eye of an observer would be valueless. But, on the contrary, the scientist believes that this medium truly and faithfully transmits to the remotest space every wave imparted to it, preserving with the strictest integrity its individuality—except that planets and other solid bodies may destroy the waves they intercept.

A star ten or more years ago started a wave which just now, we will suppose, arrives at the earth and writes its own record on some sensitized plates, though the star may be 6,000,000,000 miles away. From these impressions the physicist finds—perhaps—that the star is double, although the most powerful telescope had failed to divide it, that the two revolve about each other, and he determines there probable orbit, masses and velocities. Or, perhaps he finds, as in the remarkable star of 1892, that it changes from a star to a nebula in a few months. In all this, no question is raised in regard to the integrity of the record, nor whether in its long journey any planet, sun, comet, meteorite or nebula has interfered to modify